

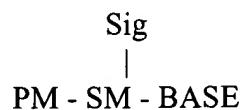
Amendments to the Claims:

The listing of the claims below will replace all prior versions and listing of claims in this application.

Listing of Claims:

1-271. (Cancelled).

272. (Previously Presented) A nucleotide having the formula



wherein PM is a phosphate moiety, SM is a sugar moiety comprising a pentose sugar selected from a ribose or a deoxyribose, and BASE is a pyrimidine, purine or 7-deazapurine moiety, said PM being covalently attached to the C2' or the C3' or the C5' position of SM, said BASE being covalently attached to the 1' position of SM from the N¹ position when BASE is a pyrimidine or the N⁹ position when BASE is a purine or 7-deazapurine, and said Sig is covalently attached to the C2' or the C3' or the C5' position of SM directly or through a linkage group and Sig is a moiety which is detectable when said nucleotide is incorporated into a double-stranded nucleic acid duplex.

273. (Cancelled)

274. (Previously Presented) The nucleotide in accordance with claim 272, comprising a deoxyribonucleotide or a dideoxyribonucleotide.

275. (Previously Presented) The nucleotide in accordance with claim 272 comprising a ribonucleotide.

276. (Previously Presented) The nucleotide in accordance with claim 272 wherein Sig comprises a moiety containing at least 3 carbon atoms.

277. (Previously Presented) The nucleotide in accordance with claim 272 wherein Sig is selected from the group consisting of monosaccharides, oligosaccharides and polysaccharides.

278. (Previously Presented) The nucleotide in accordance with claim 277 wherein Sig is selected from the group consisting of triose, tetrose, pantose, hexose, heptose and octose.

279. (Previously Presented) The nucleotide in accordance with claim 272 wherein Sig includes a glycosidic linkage moiety.

280. (Previously Presented) The nucleotide in accordance with claim 272 wherein Sig comprises a sugar residue and said sugar residue is complexed with a binding protein therefor.

281. (Previously Presented) The nucleotide in accordance with claim 280 wherein said binding protein comprises a lectin.

282. (Previously Presented) The nucleotide in accordance with claim 281 wherein said lectin comprises Concanavalin A.

283. (Previously Presented) The nucleotide in accordance with claim 272 wherein Sig comprises a component selected from the group consisting of biotin, iminobiotin, an electron dense component, a magnetic component, an enzyme, a hormone component, a radioactive component, a metal-containing component, a fluorescent component, a chemiluminescent component, an antigen, a hapten and an antibody component.

284. (Previously Presented) The nucleotide in accordance with claim 283 wherein said electron dense component comprises ferritin.

285. (Previously Presented) The nucleotide in accordance with claim 281 wherein said lectin is conjugated to ferritin.

286. (Previously Presented) The nucleotide in accordance with claim 282 wherein said Concanavalin A is conjugated to ferritin.

287. (Previously Presented) The nucleotide in accordance with claim 283 wherein Sig comprises a radioactive isotope.

288. (Previously Presented) The nucleotide in accordance with claim 287 wherein said radioactive isotope comprises radioactive cobalt.
289. (Previously Presented) The nucleotide in accordance with claim 283 wherein Sig comprises an enzyme.
290. (Previously Presented) The nucleotide in accordance with claim 289 wherein said enzyme is selected from the group consisting of alkaline phosphatase, acid phosphatase, β -galactosidase, ribonuclease, glucose oxidase and peroxidase.
291. (Previously Presented) The nucleotide in accordance with claim 283 wherein Sig comprises a fluorescent component.
292. (Previously Presented) The nucleotide in accordance with claim 291 wherein said fluorescent component is selected from the group consisting of fluorescein, rhodamine and dansyl.
293. (Previously Presented) The nucleotide in accordance with claim 283 wherein said Sig comprises a magnetic component.
294. (Previously Presented) The nucleotide in accordance with claim 293 wherein said magnetic component comprises a magnetic oxide.
295. (Previously Presented) The nucleotide in accordance with claim 294 wherein such magnetic oxide comprises ferric oxide.
296. (Previously Presented) The nucleotide in accordance with claim 293 wherein Sig includes a hapten component capable of complexing with an antibody specific thereto.
297. (Previously Presented) The nucleotide in accordance with claim 272 wherein Sig includes a catalytic metal-containing component.
298. (Cancelled)

299. (Previously Presented) A composition comprising at least one nucleotide in accordance with claim 272, a polypeptide capable of forming a complex with Sig, and a moiety which can be detected when such complex is formed.

300. (Previously Presented) The composition in accordance with claim 299 wherein said polypeptide comprises a polylysine.

301. (Previously Presented) The composition in accordance with claim 299 wherein said polypeptide comprises at least one member selected from the group consisting of avidin, streptavidin and anti-Sig immunoglobulin.

302. (Previously Presented) The composition in accordance with claim 299 wherein Sig comprises a ligand and said polypeptide comprises an antibody thereto.

303. (Previously Presented) The composition in accordance with claim 299 wherein said detectable moiety is selected from the group consisting of biotin, iminobiotin, an electron dense component, a magnetic component, an enzyme, a hormone component, a radioactive component, a chemiluminescent component, an antigen, a hapten and an antibody component.

304. (Previously Presented) The nucleotide in accordance with claim 274 wherein said Sig comprises a moiety which is detectable when said deoxyribonucleotide or said dideoxyribonucleotide is incorporated with, contained in or associated with an oligo- or polynucleotide.

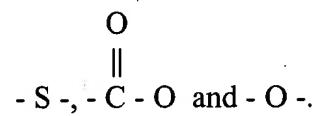
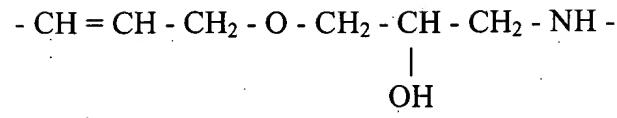
305. (Previously Presented) The nucleotide in accordance with claim 275 wherein said Sig comprises a moiety which is detectable when said ribonucleotide is incorporated with, contained in or associated with an oligo- or polynucleotide.

306. (Cancelled)

307. (Previously Presented) The nucleotide of claim 272 wherein said chemical linkage comprises or includes an olefinic bond at the α -position relative to P, or any of the moieties:

- CH = CH₂ - NH -

- CH = CH - CH₂ - NH -



308-338 (Cancelled)